Massachusetts Department of Environmental Protection
Source Water Assessment and Protection (SWAP) Report
For
Pine Valley Mobile Home Park

What is SWAP?

The Source Water Assessment and Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to:

? Inventory land uses within the recharge areas of all public water supply sources;

? Assess the susceptibility of drinking water sources to contamination from these land uses; and

? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS Name	Pine Valley Mobile Home Park
PWS Address	Wells Road
City/Town	Cheshire, Massachusetts
PWS ID Number	1058002
Local Contact	Mr. William Enser
Phone Number	(413) 243-1416

Well Name	***Source ID#***	***Zone I (in feet)***	***IWPA (in feet)***	***Source Susceptibility***
Well # 1	1058002-01G	262	667	Moderate
Well # 2	1058002-02G	262	667	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The Pine Valley Mobile Home Park is located in Cheshire, Massachusetts, a small town in northern Berkshire County. The park accommodates 96 trailers with a total population of approximately 190 people and is located east of and across the Hoosic River from the center of town. There is a municipal water system in Cheshire but there is no municipal wastewater disposal available. The park and all facilities in Cheshire utilize on-site septic disposal. The municipal water system is less than ¼-mile from the park but currently does not serve the park. Therefore, water is supplied through two on-site water supply wells.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

Wells #1 and #2 are located south of the trailer park approximately 165 feet from the nearest trailer and approximately 250 feet from a residence. There are no well construction logs available but the owner reports the wells are gravel packed wells with estimated yields of Wells #1 and #2 at 150 gallons per minute and 70 gallons per minute, respectively. The wells are constructed within a confined gravel aquifer with a clay layer between the ground surface and the well screened in the sand and gravel.

The Zone I is the area immediately surrounding the well and the Interim Wellhead Protection Area, (IWPA) provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. There is a hydrogeologic barrier (clay layer) at least in the immediate vicinity of the well. However, unless this hydrogeologic barrier is known to exist throughout the IWPA, the aquifer is considered to have a high vulnerability to contamination. Nonetheless, the hydrogeologic barrier that does exist provides some protection relative to impeding the downward migration of contaminants from areas overlying the barrier. The wells operate simultaneously but either well could supply the entire demand of the system. The protective radii are the same for both wells based on the maximum usage as reported from metered data: the Zone Is and IWPAs are 262 feet and 622 feet. Please refer to the attached map of the Zone Is and IWPAs.

The well serving the facility has no treatment at this time. The DEP requires public water suppliers to monitor the quality of the water. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Non-conforming Zone I;**
2. **Residential Land Uses; and**
3. **Transportation Corridor.**

The overall ranking of susceptibility to contamination for the well is moderate, based on

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Non-conforming Zone I	-	-		Contact DEP prior to increasing the system or conducting any additional activities in Zone I.
Fuel Storage Above Ground	Yes	Yes	Moderate	Proper maintenance and upgrades to fuel oil tanks to prevent releases from occurring
Lawn Care/Gardening	Yes	Yes	Moderate	Encourage residents in proper storage, disposal, and application of pesticides.
Transportation Corridor	Yes	Yes	Moderate	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

the presence of at least one moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Non-conforming Zone I –** Currently, the well does not meet DEP's restrictions, which only allow water supply related activities or other non-threatening activities within the Zone I. The Zone I contains driveways, roads, parking spaces, residences and associated septic systems. Systems not meeting DEP Zone I requirements must notify the DEP, receive approval and address Zone I issues prior to increasing water use or modifying systems. The system has been working toward having residents convert to propane and remove fuel oil from Zone I.

Recommendations:

- ✓ Based upon the current location of homes it may not be possible to prohibit vehicle parking within the Zone I; however, the Park should continue efforts to controlling activities in the Zone I relative to fuel usage and use of household hazardous materials.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Direct driveway and parking lot drainage in the Zone I away from the well.
- ✓ Continue efforts to have residents convert to propane or maintain tanks through tank age limitations and new tank standards.

2. **Residential Land Uses –** Pine Valley and the surrounding residences all utilize on site septic disposal. Pine Valley is presently working with the DEP to stay in compliance with wastewater requirements. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

- ➢ **Septic Systems** – Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the groundwater because septic systems lead to the ground. If septic systems fail or are not properly maintained, they could be a potential source of microbial contamination.
- ➢ **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- ➢ **Heating Oil/Kerosene Storage** - If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) can be potential sources of contamination due to leaks or spills of the fuel oil/kerosene they store. Require that fuel lines are sleeved to protect from leaks.
- ➢ **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automotive leaks, maintenance, washing, or accidents.

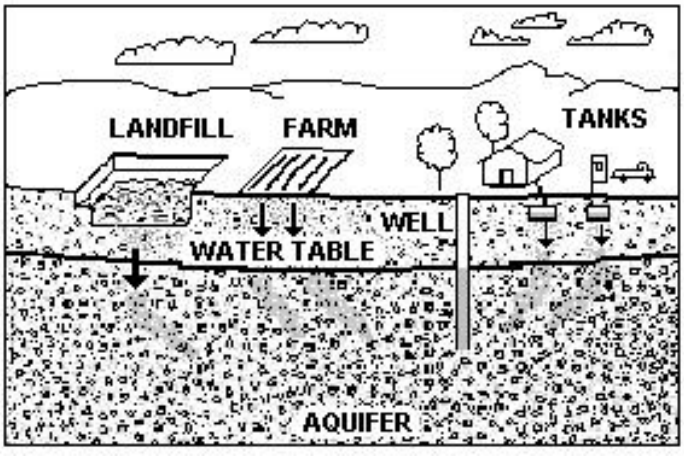

Figure 1: Example of how a well could become contaminated by different land uses and activities.

Residential Land Use Recommendations:

- ✓ Educate residents on best management practices (BMPs) for protecting water supplies. Distribute the fact sheet "Residents Protect Drinking Water" available in Appendix A and on the following DEP website www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.
- ✓ Promote BMPs for stormwater management and pollution controls.
- ✓ Consider a bylaw requiring that replacement heating/hotwater systems not be fueled by fuel oil or kerosene. Encourage maintenance of those tanks that exist and encourage conversion to propane.

For More Information:

Contact Catherine Skiba in DEP's Springfield Office at (413) 755-2119 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been made available to the public water supplier and town boards.

- ✓ Continue efforts to manage wastewater disposal and maintenance of the systems.

3. **Transportation Corridor** - Major roads are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.

Recommendation:

- ✓ Contact the local fire department to ensure that the IWPA is included in Emergency Response Planning.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Pine Valley Mobile Home Park is commended for their past efforts to utilize deep wells that are fairly remote from the facility, posting signs in the Zone Is, and educating tenants on wellhead protection issues. The facility should continue efforts in water supply protection through reviewing and adopting the key recommendations above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone Is.
- ✓ Restrict use of salt within Zone Is and drain stormwater away from well.
- ✓ Consider connecting to town water if threats cannot be mitigated or water quality is impacted.
- ✓ Conduct regular inspections of the Zone Is.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone Is.

Facilities Management:

- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility properties.
- ✓ For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- ✓ Work with local officials in town to include the facility's IWPA in Aquifer Protection District Bylaws.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Continue efforts to maintain and upgrade wastewater disposal systems.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". If funds area available, the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at the following DEP website: http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to encourage discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Areas
- Recommended Source Protection Measures Fact Sheet